

Appl. No. : 10/531,435
Filed : October 7, 2005

AMENDMENTS TO THE CLAIMS

Please cancel Claims 1-18 and withdraw Claim 44 as indicated below.

1-18. (Canceled)

19. (Previously Amended) A composition for remineralizing tooth enamel and/or for treating or preventing one or more conditions selected from the group consisting of dental caries, tooth erosion, dentinal hypersensitivity and gingivitis in a mammal, wherein the composition comprises an effective amount of a phosphoprotein preparation in combination with one or more carriers or diluents, wherein the phosphoprotein preparation has been obtained by partially cross linking a partial hydrolysate of casein or a caseinate.

20. (Previously Amended) A composition according to claim 19, wherein the partial hydrolysate has been obtained by enzymatic hydrolysis of acid casein, rennet casein or a caseinate.

21. (Original) A composition according to claim 20, wherein the enzyme is trypsin.

22. (Previously Amended) A composition according to claim 19, wherein the degree of hydrolysis is in the range of about 3% to about 8% of the total number of peptide bonds.

23. (Original) A composition according to claim 22, wherein the degree of hydrolysis is in the range of about 3.5% to about 7%.

24. (Original) A composition according to claim 22, wherein the degree of hydrolysis is in the range of about 4% to about 6.5%.

25. (Previously Amended) A composition according to claim 19, wherein the degree of hydrolysis is such that about 10% or less of the casein or caseinate is rendered insoluble at pH 7, by the partial hydrolysis.

26. (Original) A composition according to claim 25, wherein the degree of hydrolysis is such that about 5% or less of the casein or caseinate is rendered insoluble at pH 7, by the partial hydrolysis.

27. (Previously Amended) A composition according to claim 19, wherein the partial hydrolysate has been partially cross linked enzymatically, using the enzyme transglutaminase.

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28. (Previously Amended) A composition according to claim 19, wherein the degree of partial cross linking is such that the resulting phosphoprotein preparation comprises about 10 or more μmol cross links per gram of protein.

29. (Original) A composition according to claim 28, wherein the degree of partial cross linking is such that the resulting phosphoprotein preparation comprises between about 10 and about 250 μmol cross links per gram of protein.

30. (Original) A composition according to claim 28, wherein the degree of partial cross linking is such that the resulting phosphoprotein preparation comprises between about 50 and about 160 μmol cross links per gram of protein.

31. (Previously Amended) A composition according to claim 19, further comprising a source of calcium ions.

32. (Original) A composition according to claim 31, wherein the composition further comprises a source of phosphate ions.

33. (Original) A composition according to claim 30, wherein the composition further comprises calcium phosphate.

34. (Original) A composition according to claim 30, wherein the composition further comprises natural milk calcium.

35. (Previously Amended) A composition according to claim 31, wherein calcium ions are present in the composition at a level of at least about 5 mmol calcium ions per gram of phosphoprotein preparation.

36. (Original) A composition according to claim 35, wherein calcium ions are present in the composition at a level of at least about 10 mmol calcium ions per gram of phosphoprotein.

37. (Previously Amended) A composition according to claim 32, wherein the molar ratio of calcium ions to phosphate ions is in the range of about 0.8-1.2:0.4-0.8.

38. (Original) A composition according to claim 37, wherein the molar ratio of calcium ions to phosphate ions is about 1:0.6.

39. (Previously Amended) A composition according to claim 19, wherein the composition further comprises a source of strontium ions.

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40. (Original) A composition according to claim 39, wherein the composition further comprises a source of fluoride ions.

41. (Previously Amended) A composition according to claim 19, wherein the composition comprises a composition selected from the group consisting of a mouthwash, a dentifrice, toothpaste, a powder, an emulsion and a gel.

42. (Previously Amended) A composition according to claim 19, wherein the composition comprises an emulsion, wherein the phosphoprotein preparation is present in an amount of about 1% to about 15% by weight of the emulsion, and the emulsion further comprises natural milk calcium phosphate, in an amount of about 3% to about 12% by weight of the emulsion.

43. (Previously Amended) A composition according to claim 19, wherein the composition comprises a foodstuff and a confection.

44. (Withdrawn) A method for remineralising tooth enamel and/or for treating or preventing one or more conditions selected from the group consisting of dental caries, tooth erosion, dentinal hypersensitivity and gingivitis in a mammal, the method comprising contacting the teeth of the mammal with a composition according to claim 19.

45. (Original) A phosphoprotein preparation, which has been obtained by partially cross linking a partial hydrolysate of casein or a caseinate, and wherein the degree of partial hydrolysis of the casein or caseinate prior to cross linking is in the range of about 3% to about 8% of the total number of peptide bonds, and the degree of partial cross linking is such that the phosphoprotein preparation comprises about 10 or more μmol cross links per gram of protein.

46. (Original) A phosphoprotein preparation according to claim 45, wherein the degree of partial hydrolysis of the casein or caseinate prior to cross linking is in the range of about 3.5% to about 7%.

47. (Original) A phosphoprotein preparation according to claim 45, wherein the degree of partial hydrolysis of the casein or caseinate prior to cross linking is in the range of about 4% to about 6.5%.

48. (Previously Amended) A phosphoprotein preparation according to claim 45, wherein the degree of partial cross linking is such that the phosphoprotein preparation comprises between about 10 and about 250 μmol cross links per gram of protein.

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49. (Previously Amended) A phosphoprotein preparation according to claim 45, wherein the degree of partial cross linking is such that the phosphoprotein preparation comprises between about 50 and about 160 μmol cross links per gram of protein.

50. (Previously Amended) A phosphoprotein preparation according to claim 45, wherein the degree of hydrolysis is such that about 10% or less of the casein or caseinate is rendered insoluble at pH 7, y the partial hydrolysis.

51. (Previously Amended) A phosphoprotein preparation according to claim 45, wherein the degree of hydrolysis is such that about 5% or less of the casein or caseinate is rendered insoluble at pH 7, by the partial hydrolysis.